

App. Ser. No. 10/719,077
Reply to Office action of May 16, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 5 1. (Currently Amended) A system for monitoring events ~~at least one event~~ and detecting ~~at least one indicator that precedes a failure in~~ a storage area network, comprising:
- a fibre channel fabric switch element having a port monitoring agent module that monitors at least a parameter value and detects when a parameter fibre channel port link indicator value varies from a threshold value for the a parameter fibre channel port link indicator, wherein
- 10 the port monitoring agent sends a message to a performance monitoring module to process an event when the parameter value varies from the threshold value.
2. (Cancelled)
3. (Currently Amended) The system of Claim 1 2, wherein the performance monitoring module ~~may notify~~ notifies a host computer when the parameter value fibre channel port link indicator
- 15 varies from the threshold value.
4. (Currently Amended) The system of Claim 1 2, wherein ~~the~~ a fibre channel port with a parameter value that whose port link indicator varies from the threshold value ~~is~~ may be taken offline.
5. (Currently Amended) A system for monitoring events ~~at least one event~~ and detecting ~~at least~~
- 20 ~~one indicator that precedes a failure~~ in a storage area network, comprising:
- a fabric monitoring module in a fibre channel fabric switch element, wherein the fabric monitoring module that detects when a remote fabric switch and a local fabric switch cannot exchange information and then sends a message to a performance threshold monitoring module.

App. Ser. No. 10/719,077
Reply to Office action of May 16, 2005

6. (Currently Amended) The system of Claim 5, wherein a host system is notified by the performance monitoring module that the remote and the local fabric switch cannot exchange information.

7. (Currently Amended) A system for monitoring events at least one event and detecting at least one indicator that precedes a failure in a storage area network, comprising:

a chassis monitoring module in a fibre channel fabric switch element that detects when an indicator value for a switch chassis of the fibre channel fabric switch element varies from a threshold value and notifies a performance threshold monitoring module of the variation.

8. (Currently Amended) The system of Claim 7, wherein a host computer is notified of the variation by the performance monitoring module.

9. (Currently Amended) The system of Claim 7, wherein a remote fabric switch is notified of the variation by the performance monitoring module.

10. (Currently Amended) A system for monitoring events at least one event and detecting at least one indicator that precedes a failure in a storage area network, comprising:

15 a performance threshold monitoring module in a fibre channel fabric switch element that receives a message from at least one monitoring agent indicating if a parameter value an indicator varies from a threshold value, and in response to the message, the performance threshold monitoring module coordinates an event.

11. (Currently Amended) The system of Claim 10, wherein the threshold values used by the monitoring agent are stored in a threshold table.

12. (Currently Amended) The system of Claim 10, wherein the monitoring agent includes a Chassis monitoring module, a fabric monitoring module, a port monitoring module, and/or a Nx Port event monitoring module.

App. Ser. No. 10/719,077
Reply to Office action of May 16, 2005

13. (Currently Amended) The system of Claim 11, wherein the threshold values are updated based on historical data and/or reliability data.

14. (Currently Amended) The system of Claim 10, wherein the performance monitoring module notifies an event response module when an indicator value varies from a threshold value.

5 15. (Currently Amended) The system of Claim 14, wherein an event is generated in response to the notification based on an event table.

16. (Currently Amended) The system of Claim 14, wherein the event response module ~~may notify~~ notifies a host computer of the variation.

17. (Currently Amended) A method for monitoring events at least one event and detecting at
10 ~~least one indicator that precedes a failure~~ in a storage area network, comprising:
monitoring at least one parameter value, wherein event-by-using at least one monitoring agent in
a fibre channel fabric switch monitors the parameter value;
comparing the parameter ~~an indicator~~ value to a threshold value ~~corresponding to the indicator;~~
and
15 notifying a performance threshold ~~threshold~~-monitoring module if the parameter value varies from the
threshold value.

18. (Currently Amended) The method of Claim 17, further comprising:
consolidating plural threshold variations and notifying an event response module of the variations, wherein the performance monitoring module consolidates plural threshold variations.

20 19. (Currently Amended) The method of Claim 18, further comprising:
generating an events in response to a threshold variation.

20. (Currently Amended) The method of Claim 18, further comprising:

App. Ser. No. 10/719,077
Reply to Office action of May 16, 2005

notifying a host computer of the threshold variation, wherein the performance monitoring module notifies the host computer.

21. (Currently Amended) A system for notifying a computing system of an indicator that precedes a failure in a storage area network, comprising:

5 at least one monitoring agent in a fibre channel fabric switch element module that monitors an indicator that can result in a failure in the storage area network; and
a performance monitoring module that compares ~~the~~ an indicator value to a threshold value and coordinates an event if the indicator value varies from the threshold value.

22. (Currently Amended) The system of Claim 21, wherein a threshold table maintains
10 the threshold value that can be updated based on historical data and/or reliability data.

23. (Currently Amended) The system of Claim 22, wherein the monitoring agent ~~module~~
may include at least a chassis monitor, port monitor, Nx_Port monitor, and/or fabric monitor.

24. (Currently Amended) The system of Claim 23, wherein the chassis monitor detects when an
15 indicator value for a switch chassis varies from a threshold value and notifies the performance
threshold monitoring module of the variation.

25. (Currently Amended) The system of Claim 23, wherein the port monitoring module tracks
port statistics for fibre channel ports and sends a message to the performance threshold-monitoring
20 module to process an event when a fibre channel port link indicator value varies from the
threshold value.

26. (Currently Amended) The system of Claim 23, wherein the fabric monitoring module detects when a
remote fabric switch and a local fabric switch cannot exchange information and then sends a message to
the performance threshold-monitoring module.

App. Ser. No. 10/719,077

Reply to Office action of May 16, 2005

27. (New) A fibre channel fabric switch element, comprising:

a port monitoring agent that monitors at least a parameter value and detects when a parameter value varies from a threshold value for a parameter, wherein the port monitoring agent sends a message to a performance monitoring module to process an event when the parameter value varies from the threshold value.

28. (New) The switch element of Claim 27, wherein the performance monitoring module notifies a host computer when the parameter value varies from the threshold value.

29. (New) The switch element of Claim 28, wherein a fibre channel port with a parameter value that varies from the threshold value is taken off-line.

30. (New) The switch element of Claim 27, wherein the performance threshold-monitoring module notifies an event response module when an indicator value varies from a threshold value.

31. (New) The switch element of Claim 30, wherein an event is generated in response to the notification based on an event table.

32. (New) The switch element of Claim 27, wherein the monitoring agent includes a Chassis monitoring module, a fabric monitoring module, a port monitoring module, and/or a Nx_Port event monitoring module.

33. (New) The switch element of Claim 32, wherein the fabric monitoring module detects when a remote fabric switch and a local fabric switch cannot exchange information.

34. (New) The switch element of Claim 32, wherein the chassis monitor detects when an indicator value for a switch chassis varies from a threshold value and notifies the performance monitoring module of the variation.

App. Ser. No. 10/719,077
Reply to Office action of May 16, 2005

35. (New) The switch element of Claim 32, wherein the port monitoring module tracks port statistics for fibre channel ports and sends a message to the performance monitoring module to process an event when a fibre channel port link indicator value varies from the threshold value.